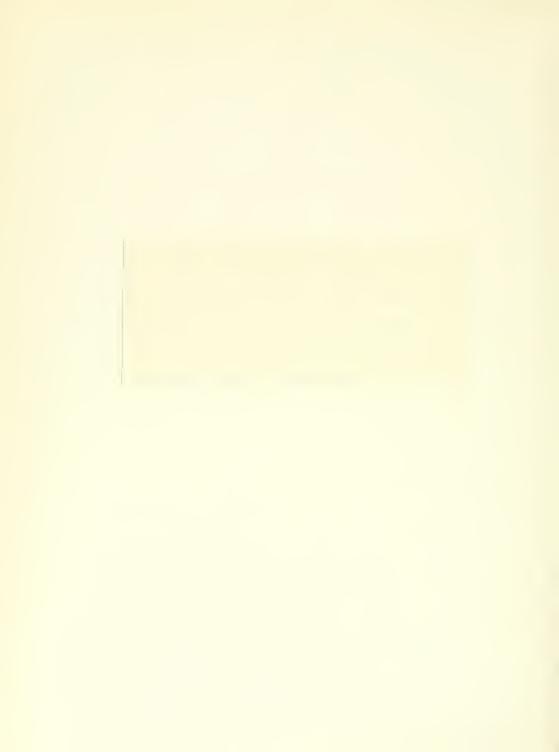# WORKING PAPER
ALFRED P. SLOAN SCHOOL OF MANAGEMENT

Research Program on the Management
of Science and Technology

LONGITUDINAL QUESTIONNAIRE PROCESS
ANALYSIS OF OCCUPATIONAL CHOICE

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LONGITUDINAL QUESTIONNAIRE ANALYSIS OF OCCUPATIONAL CHOICE

Armed with the Generalizable Decision Process model, GDP-I, [1] it is
now quite simple to generate a number of novel propositions about human
choice behavior, that are readily testable by means of longitudinal question-
naire analysis. The latter technique represents a much more efficient and
perhaps more easily validated means of gathering data than the quite cumber-
some, expensive, and often dubiously reliable verbal protocol methods which
had originally enabled us to formulate the GDP-I model. This paper is a
report of a decision process study designed to test the following GDP hypo-
theses.

HYPOTHESIS I

"Dm's Termination of Search for new alternatives will occur a signi-
ficant period of time before he announces that his Decision is made."

GDP-I suggest that the intervening period of time between Search Termination
and Decision Announcement is occupied by Dm's Confirmation processes, which
are described by the model as being qualitatively quite different from his
anteceding Search and Evaluation processes.

HYPOTHESIS II:

>"When Dm terminates Search for new alternatives he will report great
>felt Uncertainty regarding which alternative he eventually will select
>as his Choice."

The reasons for Dm's Confirmation processing are, according to GDP-I,
real or "rational" enough. Dm will as a rule have significant amounts of
information processing left to do on the subset of alternatives from which
his Choice is to be selected, before he can admit to himself or to others
that his Decision has been made.

HYPOTHESIS III:

>"When Dm terminates Search for new alternatives his Choice Candidate
>may be identified as that alternative for which he at this point in
>time reports even the slightest differential amount of preference.
>Dm will eventually select his Choice Candidate to be his final Deci-
>sion."

GDP-I spells out how Dm is thought to select a Choice Candidate, based on
the alternative's scores on Dm's Primary and Secondary goal-attributes. In
cases where Dm is able to identify a Favoritely Acceptable Alternative --
as defined by GDP-I -- which then becomes his Choice Candidate, this event,
according to the model, leads Dm to terminate Search for new alternatives.
However, termination of Search for new alternatives will not also cause Dm
to terminate his Investigation of previously discovered alternatives, if
more information remains to be collected about the latter.[2]

HYPOTHESIS IV:

"When Dm terminates Search for new alternatives he will already have
ascertained that his Choice Candidate is indeed a viable alternative.
In an Occupational Choice context this condition is satisfied when
Dm either possesses, has been explicitly promised, or is more than
90% certain that he will obtain, a job Offer from his Choice Candi-
date."

According to GDP-I a Potentially Favoritely Acceptable alternative
does not become a Choice Candidate, and thus lead to termination of further
Search, until Dm has ascertained that the former alternative in fact is a
real alternative. However, GDP-I also specifies the conditions under which
Dm may terminate Search without a firm promise of an offer from whatever
alternative he is eventually going to choose, namely:

a. Dm's computational resources to be allocated to the present problem
   may have run out, or have over-run their budget limits, without Dm hav-
   ing been able to identify any Potentially Favoritely Acceptable alterna-
   tives; or

b. Dm may have identified two or more Potentially Favoritely Acceptable
   alternatives, his joint uncertainty of not getting an offer from
   either of which is sufficiently low to be neglible.

But, in the Occupational Choice context studied below, cases falling in either
of the two latter categories may be expected to be comparatively rare.

HYPOTHESIS V:

> "In the observational period just preceding Termination of Search
> for new alternatives Dm will not have been assured that the alterna-
> tive which later became his Choice Candidate was at that point a
> viable alternative."

If most of the cases expected to be observed below are characterized by Dm's
terminating Search for new alternatives because he has located a Favoritely
Acceptable Alternative, then, since Dm's obtaining an Offer or the promise
of an Offer is a necessary condition for a Potentially Favoritely Acceptable
alternative to become his Choice Candidate, Dm's not having such an Offer
at one period of observation earlier would have been a sufficient condition
for his continuing Search at that point. In other words, if Dm had actually
obtained an offer from a Potentially Favoritely Acceptable alternative earlier
he should, according to GDP-I, indeed have Terminated Search at that earlier
date.

HYPOTHESIS VI:

> "In the period preceding Search Termination Dm will report that no
> Acceptable alternative is presently Available to him. At the point
> of Search Termination Dm will as a rule have Available to him only
> a single Acceptable alternative."

The hypothesis that Dm will terminate Search as soon as he has
Available one Acceptable alternative is of course a key proposition in tra-
ditional Aspiration-level Satisficing theory.[3] GDP-I, on the other hand,
hypothesizes that although Dm's having available at least one acceptable
alternative may be a necessary condition for Search Termination and eventu-
ally for Choice, it is not a sufficient condition for either of these events
to take place. Indeed GDP-I leads us to expect that Dm's Active Roster
will frequently contain one or more Acceptable and Available alternatives
for a significant period of time before Search is terminated, which would
serve to explain why two or more Acceptable alternatives may well be Avail-
able to Dm at Search Termination.

HYPOTHESIS VII:

> "At time of Search Termination Dm may or may not have determined that
> his Confirmation Candidate -- his second-most preferred alternative --
> is an Available alternative. On the other hand, at the time of Con-
> firmation Termination, i.e. at time of Announced Choice, Dm will have
> determined whether his Confirmation indeed is or is not an Available
> alternative."

According to GDP-I Dm's not having yet received an Offer from his
Confirmation Candidate at time of Search Termination presents him with a
Confirmation Problem, which he will then feel a need to resolve before he
feels free to make his Decision.

HYPOTHESIS VIII:

> "When Dm has made his Decision he will engage in Dissonance Reduction,
> which will monotonically spread apart his reported Liking or Prefer-
> ence ratings of his announced Choice relative to the Rejected alter-
> natives."

This hypothesis is due to Festinger, who claims that a necessary con-
dition for what he calls Dissonance Reduction to occur is that Dm has some-
how been Committed to his Decision, for example by means of an explicit
public   pronouncement.[4]

GDP-I theory, on the other hand, leads us to expect as great, if not
a greater, spreading-apart of Dm's Liking for his Choice Candidate, relative
to say his Confirmation Candidate, during the Confirmation phase of his deci-
sion processing, i.e. prior to point in time when Dm overtly commits himself
to the statement that he has made his Decision.

In order to reconcile our theoretical interpretation of these two
different, but not necessarily conflicting hypotheses, we could for example
consider any post-Choice Dissonance Reduction that we might observe as
being a symptom of Dm's post-Choice continuation of whatever decision rationa-
lization process GDP-I hypothesizes will take place to an even greater extent
during the Confirmation phase of Dm's decision making. The conditions under
which Dissonance Reduction will or will not take place -- e.g. the conditions
under which Dm's Confirmation processing would leave any residual rationali-

zation left to be carried out post-choice, and what will then determine how intensely, and in which direction, this "spreading apart" Dissonance Reduction effect will manifest itself -- remain an obvious and interesting set of questions, the answers to which neither Festinger nor GDP-I in its present version provides much help in clarifying (although see below in our Summary of Findings).

METHOD AND OBSERVATIONAL INSTRUMENTS

The decision makers studied were second-year Masters' candidates the MIT Sloan School of Management. Their decision problem was clearly defined to be Occupational Choice: their selection of a career job to embark on after graduation. Our method of observation was a periodic questionnaire, administered bi-weekly over a four-month period from February to June, 1965, which for most of the Dms covered the Search, Confirmation, and post-Choice Commitment phases of their decision making. The original sample size was 43, selected from a graduating class of more than twice that size by means of intense but non-coercive persuasion. The Dms were not paid directly for participating in the study, but after every period of observation two or three $10.00 prizes were drawn at random for distribution among those souls who had completed their responses to our bi-weekly questionnaire on time. Those who did not were then persuaded to do so by mail, telephone, and direct personal follow-up. A grand prize of $100.00 -- to which was attached the title "Decision Maker of the Year"-- was drawn for in June among those who had diligently completed their responses for all periods. Total time to complete all questions ranged from 15 minutes to 1-1/2 hours, with a mean of well over 1/2 hour, for every period of observation. Most participants completed all eight observations, a few Dms even volunteered one or two extra periods.

The questionnaire items used to test the main above eight hypotheses read as follows:

Question A:

"Presently I (am, am not) actively looking for new companies to interview."

Question B:

"Presently, whenever (if) a new job opportunity presents itself in my general area, I'm (very much, quite, only somewhat, not particularly) inclined to take the trouble to follow it up (i.e. interview, etc.)".

Question F:

"I believe I (am still far away from making, am getting closer to making, am quite close to making, have recently started to make, am still in the process of making, have actually made) my final job decision (check one or more)."

Question K:

"What I consider to be the Ideal job for me (has; has not) changed perceptively since my last report."

Question 5B

"Offhand I'd say this job prospect looks like it's about (0-100%) as good as what I consider would be an Ideal job for me."

Question 4B:

"Please group all (job) prospects into (the following) four classes:

    A: This sounds like an outstanding job opportunity;

    B: Good solid job, but not outstanding;

    C: Borderline case, as far as I'm concerned;

    D: Not good for me."

Question 7A

"At the moment I (like, dislike) this job prospect (very very much, quite a lot, a fair amount, just a little, so-so)"

Question 4A

"Indicate how much you currently like this job prospect by means of a numeral on the following scale (from -10 to +10)."

Question 6A

"I like this job prospect (much less, somewhat less, no more no less, somewhat, much more) now than I did at the time of my last report."

Question 7B

"Assign your present personal probability estimate (0 - 100%) to each job prospect that you actually will end up working for them."

Question 5B

"At present it's (virtually certain, highly likely, fairly likely, slightly likely, entirely uncertain) that I (will or won't) end up working for this job prospect."

Question 10A

"Please indicate which is more true (for each job prospect):

they've since told me they'd not be able to make me an offer;

they told me I'd definitely get an offer, but I haven't seen it yet;

I'm still awaiting their final response re an offer or not;

I have an offer from them;

I have not completed their application procedure yet."

Question 11

If Dm is AFR, Awaiting Further Response from an alternative, or NA, has Not completed all Application procedures:

"It's (virtually certain, highly likely, fairly likely, slightly likely, entirely uncertain whether they will or won't) that they (will, won't) make me a job offer.

"My personal probability of that occurring is __ %."

See Appendix A below for a faxsimile reproduction of the total quesionnaire in its two (pre and post-Choice) editions.

Sample size

Of the original forty-three Dms who agreed to participate in the study eleven had to be excluded from analysis for the following reasons:

- from two Dms no response was received for a two-month period or more;

- three Dms postponed making a decision till three months after the study had been terminated;

- two Dms made their decision before the first observation;

- three Dms made no reports beyond the first two or three periods, terminating their participation in the study before they had reached their decisions;

- one Dm submitted such an erratic and inconsistent response pattern, making and remaking his decision, that it was decided arbitrarily to remove him from further analysis.

This left us with thirty-two "good" Dms whose response patterns are analyzed in the following pages.

RESULTS

HYPOTHESIS I:

"Dm's termination of Search for new alternatives will occur a significant period of time before he announces that he has made his Decision."

Search Termination Measure:

The first period of observation in which both Question $\underline{A}$ is answered NOT and Question $\underline{B}$ is answered either ONLY A LITTLE or NOT PARTICULARLY.

Decision Made measure:

Question $\underline{F}$ is answered MADE.

Period Between Search Termination and Decision measure:

Number of calendar days from first bi-weekly observation date on which Search is reported terminated till date given by Dm in retrospect for the making of his Decision. This measure may provide an up to two-week under-estimate of the true length of the interim period.

TABLE I Summarized:

a. 87% or 27 Dms of 31 terminated their Search for new alternatives at least ten days or more before the date on which they report having made their Decision:

b. 1 Dm terminated Search less than 10 days but more than a week before his Decision Made date.

c. 3 Dms report Search Termination and Decision Made on the same observation. (In each of these cases Search may in fact have been terminated from zero up to 10 or 14 days before Dm's Decision Made date.)

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TABLE I

Search is reported by Sm to be terminated i observational periods and x real time periods before he reports his Decision made.	Search reported in process during the first period of observation.	Search had been terminated before the first period of observation.
$i < 0$	None	Impossible
$i = 0$ $0 \leq x < 2$ weeks	V-4, *c-7, *e-5, *a-5[(1)]	
$i = 1$ $0 \leq x$ 1 week 1 week $\leq x <$ 10 days 10 days $\leq x <$ 2 weeks $x \geq$ 2 weeks	 P-2 E-5, Q-6, *d-5 C-4, F-3, K-6, M-3	 L-1-and-3,
$i = 2$ 1 week $\leq x <$ 2 weeks 2 weeks $\leq x <$ 3 weeks 3 weeks $\leq x <$ 4 weeks $x \geq$ 4 weeks	 I-6, R-3, U-4 A-2, B-4, N-3, *b-3 S-2, T-3	 *g-1 W-1
$i = 3$ 3 weeks $\leq x <$ 4 weeks 4 weeks $\leq x <$ 5 weeks 5 weeks $\leq x <$ 6 weeks $x \geq$ 6 weeks	 X-4 J-2 H-5 Y-3, Z-2	 D-1
$i = 4$, $x >$ 7 weeks		O-1
$i = 5$, $x >$ 9 weeks		
$i = 6$, $x >$ 11 weeks		
$i = 7$, $x >$ 12 weeks	G-3	

(1): *a later changed his initially reported Decision.

Note: numeral after each name indicates the observational period in which Search was first observed to have been terminated.

HYPOTHESIS II:

'When Dm terminates Search for new alternatives he will report felt
uncertainty regarding which alternative he eventually will select as his Choice."

Search Termination measure:

Same as for Hypothesis I above.

Felt Uncertainty measure:

Questions 3B, 5B, 7B, and 9A all ask Dm to indicate the likelihood with which
he will select, i.e. end up working for, the alternative. Table II is compiled
on basis of Questions 5B and 7B. For operational definitions of Choice Candidate
and Confirmation Candidate alternatives see Hypothesis III below.

TABLE II Summarized:

a. On a sample of 28 Dms reporting their average Non-normalized Personal
   Probabilities at time of Search Termination that they will end up with
   either their Choice Candidate (Ch), their Confirmation Candidate (Cf),
   or some Other (Oth) alternative as their Final Decision was .29, .24,
   and .47 respectively.

b. The adjusted Experimenter-normalized Personal Probabilities for the same
   set of events, over the same 28 Dms was .40, .26, and .34 respectively.

   Both the Non-normalized and Experimenter-normalized average Personal
   Probability figures testify to the great uncertainty generally felt by
   Dms that they would indeed end up choosing their Choice Candiate.

c. 78%, or 21 of 27 Dms report a non-additive Possibility index of FAIRLY
   LIKELY (Fy) or higher at time of Search Termination that they will end up
   selecting their Confirmation Candidate (Cf) as their final Choice.

   1 of 27 Dms has actually started to rule out the latter possibility, i.e.
   one Dm reports a lower Possibility index than ENTIRELY UNCERTAIN (U) whether
   he will or won't eventually choose his Confirmation Candidate.

<u>d</u>.   39% or <u>11 of 28 Dms</u> report $\underline{P(Ch) > P(Cf)}$, i.e. a <u>greater</u> Possibility
index for their Choice Candidate then for their Confirmation Candidate
at time of Search Termination.

50% or <u>14 of 28 Dms</u> report $\underline{P(Ch) = P(Cf)}$, i.e. <u>no greater</u> Possibility
index for their Choice Candidate than for their Confirmation Candidate
at time of Search Termination.

<u>11%</u> or <u>3 of 28 Dms</u> report $\underline{P(Ch) < P(Cf)}$.

TABLE II

Ch:Cf:Oth denotes Dm's own relative Personal Probabilities, at time of Search Term-
  ination, of finally choosing the alternative we have identified as Ch, his
  Choice Candidate, relative to Cf, his Confirmation Candidate. Oth denotes the
  Sum of the Personal Probabilities Dm at this time assigns to all Other alterna-
  tives.

VY: Virtually certain Yes;   SY: Slightly likely Yes;
HY: Highly likely Yes;   U: Entirely Uncertain whether Yes or No;
FY: Fairly likely Yes;   Similarly for No's: VN, HN, FN, SN.

Dm	Personal Probability Ch:Cf:Oth	Normalized	Non-additive Likelihood Ch:Cf	Dm	Personal Probability Ch:Cf:Oth	Normalized	Non-additive Likelihood Ch:Cf	Dm	Personal Probability Ch:Cf:Oth	Normalized	Non-additive Probability Ch:Cf
A	70:20: 5	✓	HY:HN	L (2)	30:15: 55	✓	FY:HY	V	Na	Na	Na
B	70:80:395	15:18:67	FY:FY	M	90:80:350	17:15:68	HY:HY	W	90:70: 10	53:41: 6	HY:FY
C	80:80: 95	31:31:38	HY:FY	N	25:20: 35	✓	FY:FY	X	50:30: 20	✓	FY:FY
D	50:30: 20	✓	FY:U	O	30:30: 45	28:28:44	HY:HY	Y (3)	85:85:440	14:14:72	FY:HY
E	60:30: 10	✓	FY:SY	P	40:35: 20	✓	SY:FY	Z	25:25: 50	✓	FY:FY
F	90:10: 0	✓	___	Q	45:40: 15	✓	FY:FY	a*	Na	Na	Na
G	40:40: 37	34:34:32	SY:SY	R	75:75:345	15:15:70	FY:FY	b*	35:35: 85	23:23:54	FY:FY
H (1)	30:60:100	15:30:55	FY:SY	S	30:25: 45	✓	HY:FY	c*	Na	Na	Na
I	60:50: 20	46:38:16	HY:FY	T	40:40: 20	✓	HY:FY	d*	60:40: 20	50:33:17	HY:SY
J	25:22: 48	✓	FY:FY	U	45:45: 10	✓	FY:FY	e*	Na	Na	Na
K	35:20: 44	✓	FY:FY					g*	30:30: 40	✓	HY:HY

(1): First chose Ch, later switched to Cf.

(2): Was subsequently rejected by Ch.

(3): Dm chose Cf, his second ranked alternative.

HYPOTHESIS III

"When Dm terminates Search for new alternatives his Choice Candidate may be identified as the alternative for which he at that point in time reports even the slightest differential amount of preference. Dm will eventually select his Choice Candidate to be his Final Decision."

Search Termination measure:

Same as for Hypothesis I above.

Choice Candidate measure:

Question 5A will usually be the most sensitive discrimminator of Dm's Relative Preference among alternatives. In cases where Dm's answers to Preference Question 5A are tied, Preference Question 4A will be consulted for possible discrimmination. If such is still not forthcoming Likelihood Questions 3B and/or 7B will be consulted in order possibly to break Dm's Preference tie among alternatives. Dm's Choice Candidate is thus defined to be his Most Preferred and, if not unique, his Most Likely alternative according to his answers to the above questions at time of Search Termination.

Confirmation Candidate measure: Same as Choice Candidate measure, but for Dm's Second-most preferred alternative.

Final Decision measure: Same as for Hypothesis I above.

Table III Summarized:

a. 87%, or 25.5 Dms of 29, selected the independently identified Choice Candidate as their Final Decision, one to twelve weeks, with a median of 3 weeks, after they reported their Search for new alternatives to be Terminated -- at which time they had also reported that their Decision was then not yet made, see Table II. (1 Dm reported a complete tie among his two top alternatives at time of Search Termination. He was counted as 1/2.)

b. 9% or 2.5 Dms, chose their independently identified Confirmation Candidate.

c. 1 Dm chose neither his Choice Candidate nor his Confirmation Candidate. (Since Search Termination he received an unexpectedly outstanding, revised offer from the 9th ranked alternative in his preference order, which he accepted.)

TABLE III-IV-VII

(for legend and notes see next page)

<u>Top entries</u> in each row refer to Dm's <u>Ch</u> Choice Candidate alternative.

<u>Bottom entries</u> in each row refer to his <u>Cf</u> Confirmation Candidate alternative.

<u>The middle column</u>, in cases where a Search Termination entry is <u>NA</u> or <u>AFR</u>, indicates Dm's personal probability estimate at that point of his Receiving an Offer from that alternative.

Dm	Search Termination Status	Dm's Probability of HO	Decision Time Status	Final Decision Ch | Cf	Dm	Search Termination Status	Dm's Probability of HO	Decision Time Status	Final Decision Ch | Cf
A	HO / NA	Nd	HO / NA	✓ Ch	Q	HO / AFR	Nd	HO / HO	✓ Ch
B	HO / HO		HO / HO	✓ Cf	R	DG / HO		HO / HO	✓ Ch
C	DG / HO		HO / HO	✓ Ch	S	HO / AFR	.80	HO / HO	✓ Ch
D	HO / AFR	.35	HO / NOF	✓ Ch	T	AFR / NA	.90 / .50	HO / HO	✓ Ch
E	HO / HO		HO / HO	✓ Ch	U	HO / DG		HO / HO	✓ Ch
F	HO / NA	.90	HO / AFR	✓ Ch	V	— [3] / —		HO / NOF	
G	NA / NA	.70 / .80	HO / HO	✓ Ch	W	DG [7] / AFR	.55	HO / NOF	✓ Ch
H	HO / HO		HO / HO	✓ Ch	X	HO / NA	.67	HO / NOF	/ Ch
I	HO / AFR	Nd	HO / HO	✓ Ch	Y	HO / NA	.60	HO [4] / HO	✓ Cf
J	HO / HO		HO / HO	neither [8]	Z	DG / DG		HO / HO	✓ Ch
K	DG / NA	Nd	HO / DG	✓ Ch	*a	AFR / HO	.50	HO / HO	✓ Ch
L	DG [9] / —		HO / HO	✓ Ch	*b	AFR [6] / AFR	.50 / .80	HO / HO	ambiguous
M	DG / HO		HO / HO	✓ Ch	*c	— [3] / —		HO / NOF	
N	NA / AFR	.90 / .90	HO / HO	✓ Ch	*d	AFR / NA	.95 / .40	HO / NOF	✓ Ch
O	HO / AFR	.60	HO / HO	✓ Ch	*e	— [3] / —		HO / HO	
P	DG / AFR	.90	HO / AFR	✓ [2] Ch	*g	DG / DG		HO / HO	✓ Ch

Legend and Notes

Table III-IV-VII

HO: Dm Has an Offer from this alternative

NA: Dm has Not completed entire Application procedure for the alternative.

DG: Dm has been promised Definitely he would Get an offer.

AFR: Dm is Awaiting Further Response from the alternative.

NOF: "No Offer" notice recived, i.e. Dm was rejected.

Nd: No data available.

Notes:

    (1) Meanwhile Dm Received a revised (Like Much More) offer from Cf.

    (2) Later switched when Cf made an (Like Much More) offer.

    (3) Search Termination report coincides with Dm's Decision Made report.

    (4) Dm chose his Second-rated Cf alternative at Decision time, (further education).

    (5) Dm was employed at Cf at time of Search Commencement, hoped for, but did not expect, an offer from his Ch at time of Search Termination. Dm then accepted his Cf (current employer), but subsequently remade his Decision in favor of his original Ch when the latter came through with an Offer.

    (6) Two alternatives were tied for First Preference place, such that each one counted as ½Ch and ½Cf.

    (7) Dm reported a rank order conflict between his Preference for versus his Probability-of-ending-up-with his top two alternatives. As Dm's Preference seems to indicate a recognized case of wishful thinking on Dm's part, his clearly discrimminating Probability rating was given the heavier weight in determining Ch.

    (8) Dm chose No. 9 on his preference list, after having received a revised (Like Much More) offer from the alternative.

    (9) Dm was rejected by his Ch in the third observation-period. The onset of of Confirmation was then updated to this period, and his old Cf thereafter considered to be his new Ch.

HYPOTHESIS IV

"When Dm terminates Search for new alternatives he will already have ascertained that his Choice Candidate is indeed a viable alternative."

In an Occupational Choice context this condition is satisfied when Dm either possesses, has explicitly been promised, or is virtually certain that he will obtain a job Offer from his Choice Candidate.

Search Termination measure:

same as for Hypothesis I above.

Choice Candidate measure:

same as for Hypothesis III above .

Choice Candidate Viability measure:

Choice candidate in Questions 10A and 11A is rated to be either HO, DG, or "NA/AFR with a greater than or equal to 90% personal probability estimate of receiving HO," at time of Search Termination.

TABLE III-IV-VII Summarized:

a. 90%, or 26 Dms of 29, had ascertained that their Choice Candidate was a Viable Alternative when they Terminated Search for new alternatives:

> 26 Dms reported HO, DG, or NA/AFR with $\geq$ 90% estimate of receiving HO.
> 3 Dms reported NA/AFR with < 90% estimate of receiving HO.

b. 3 Dms' report of Search Termination coincided with their report of Decision Made, and did thus not furnish data with which to test Hypothesis IV.

HYPOTHESIS V

"In the observational period just preceding termination of Search for new alternatives Dm will not have been assured that the alternative which subsequently became his Choice Candidate was at that point a viable alternative."

Search Termination measure:

Same as for Hypothesis I above.

Choice Candidate measure:

Same as for Hypothesis III above.

Alternative Viability measure:

Same as for Hypothesis IV — applied to the observation period preceding Dm's Search Termination.

TABLE V Summarized:

a. Conservative Interpretation:

   63%, or 17 out of 27 Dms, report neither DG nor HO in their Potentially Favoritely Acceptable alternative -- which subsequently became their Choice Candidate -- in the period of observation preceding reported Search Termination.

b. Liberal Interpretation:

   82%, or 25 out of 28 Dms, either report neither DG nor HO in their Potentially Favoritely Acceptable alternative, or have not yet identified a Potentially Favoritely Acceptable alternative, in the period preceding Search Termination.

TABLE V

(for legend see Table III-IV-VII)

Dms who reported NA/AFR and < 90% sure of getting an Offer on that alternative which in the next, Search-Termination observation period was identified as their Choice Candidate:	G-2, I-5, J-1, K-5 M-2, P-1, Q-5, R-2 T-2, V-3, X-3, a-4 b-2, c-3, d-4
Dms who reported DG/HO on the alternative that in the next observation period was identified as their Choice Candidate, but who did not eventually choose this alternative -- yet who did report NA/AFR on the alternative, the Confirmation Candidate, which in fact became their Final Choice:	B-3, Y-2
Dms who reported DG on the alternative that was subsequently identified as their Choice Candidate, but who did not at this time give this alternative top billing -- i.e. who did not then consider this alternative to be Favoritely Acceptable -- yet who did report HO and a Like Much More preference increment for this alternative in the next, Search-Termination observation period, when this alternative thus was identified as their Choice Candidate:	E-4, L-2, U-3 Z-1, e-4
Dms who reported HO on the alternative that was subsequently identified as their Choice Candidate, but who gave evidence that they might not at this time have considered the alternative to have been Favoritely Acceptable, i.e. who subsequently obtained additional information about it which lead them to Like (it) Much More:	F-2, H-4
Dms who reported HO/DG on the alternative that was subsequently identified as their Choice Candidate and who gave no explicit evidence to support a belief that this alternative was not Favoritely Acceptable also in the observation period of preceding Search Termination:	A-1, C-3, S-1
Dms for which observations were not available for the period preceding their first Search Terminated Report:	D, W, O, g.

HYPOTHESIS VI   (from traditional Aspriation-level Theory):

"In the period preceding Search Termination Dm will report that he has Available to him no Acceptable alternatives. At the point of Search Termination Dm will as a rule have Available to him only a single Acceptable alternative."

Search Termination measure:
Same as in Hypothesis I above.

Available Acceptable Alternative measure:
Any alternative on which Dm has received HO or has been promised DG an Offer, which he also rates to be either OUTSTANDING, i.e. classifies as A on Question 4B, or GOOD, i.e. classifies as B on Question 4B with a concommitant Ideal-percentage score on Question 5A of 80% or more.

Comment:
The above AA-measure is most likely a highly conservative interpretation of Available Acceptable -- in which case of course our results will be biased in favor of the above Aspirations-level Satisficing hypothesis, which by the GDP-I model should be rejected as an insufficient description of Dm's Choice process.

TABLE VI Summarized:

a. 71%, or 17 Dms of 24, report Search and Evaluation patterns which are not compatible with traditional Aspriation-level Satisficing theory, i.e. with Hypothesis VI, but which are compatible with the GDP-I model.

b. 12%, or 3 Dms of 24, report Search and Evaluation patterns which are compatible with both traditional Aspriation-Level Satisficing theory, i.e. with Hypothesis VI, as well as with the GDP-I model.

c. 17%, or 4 Dms of 24, report Search and Evaluation patterns of ambiguous interpretation;

d. 8 Dms did not furnish adequate data with which to test Hypothesis VI.

TABLE VI

AA alternative: Available Acceptable alternative;

ST: Period in which Search Termination is observed;

ALS Theory: Aspiration-Level Satisficing Theory

Dm	No. of AA alternatives at (ST-1)	No. of AA alternatives at (ST)	Compatibility with ALS Theory	Dm	No. of AA alternatives at (ST-1)	No. of AA alternatives at (ST-1)	Compatibility with ALS Theory
A	1	1	NO	Q	0	1	YES
B	1	2	NO	R	2	3	NO
C	2	2	NO	S	2	1 (2)	NO
D	Na	0 (1)	--	T	1	1	NO
E	1	2	NO	U	1	5	NO
F	2	1 (2)	NO	V	Na	Na	—
G	0	0 (3)	?	W	Na	1	—
H	3	2 (2)	NO	X	0	1	YES
I	0	0 (1)	?	Y	1	1	NO
J	2	1 (2)	NO	Z	4	6	NO
K	2	3	NO	*a	0	0 (4)	YES
L	Na	1	—	*b	4	3	NO
M	1	3	NO	*c	4	3	—
N	0	0 (3)	?	*d	0	0 (3)	?
O	Na	1	—	*e	Na	Na	—
P	Na	0 (1)	—	*g	Na	4	NO

(1) Dm's highest Percentage Ideal rating of any Available alternative was 70%.

(2) Dm's Percentage Ideal rating on one alternative dropped below 80% in the interim.

(3) No Potentially Acceptable alternative was either HO or DG at ST (see Table III-IV-VII).

(4) Dm was already employed at time of Search Commencement. He rated his employer as 50% Ideal when he Terminated Search. After which time he subsequently committed himself to his present employer. But when his 100% Ideal alternative (Harvard DBA Program) made an Offer, Dm immediately switched to it.

HYPOTHESIS VII

"At time of Search Termination Dm may or may not have determined that his Confirmation Candidate is a viable, i.e. Available, alternative. At time of Confirmation Termination Dm <u>will</u> have determined whether or not his Confirmation Candidate indeed is an Available alternative."

Search Termination measure

Same as for Hypothesis I above.

Confirmation Termination measure:

Confirmation is hypothesized to terminate on the date on which Dm announces that he has made a Decision.

Viable Available Alternative measure:

Alternative on which Dm has (<u>HO</u>) or has been promised (<u>DG</u>) an Offer.

TABLE III-IV-VII Summarized:

a. <u>81%,</u> or <u>13 Dms of 16</u>, who have no <u>HO</u> or <u>DG</u> Offer from their Confirmation Candidate at time of Search Termination indeed <u>have</u> determined whether or not the Confirmation Candidate is viable <u>HO</u>, <u>DG</u>, or <u>NOF</u> by the time of Choice.

b. <u>19%</u>, or <u>3 Dms</u> (Δ, <u>F</u>, and <u>P</u>) of 16, have <u>not</u> determined whether their Choice Candidate is viable at time of Choice. [However, both Dms Δ and <u>F</u> report 50% or more Ideal-percentage point difference between their Confirmation and Choice Candidates <u>before</u> the time of Choice, i.e. had thus rejected their Confirmation Candidate "out-of-hand".]

c. <u>11 Dms of 27</u> report either HO or DG on their Confrimation Candidate already at time of Search Termination.

d. <u>5 Dms</u> do not provide adequate data for analysis of Hypothesis VII.

HYPOTHESIS VIII (due to Heider, Festinger, and others)

"When Dm has made his Decision he will engage in Dissonance Reduction,
which will monotonically spread apart his reported liking or preference ratings
of his announced Choice relative to the Rejected alternatives."

Decision made measure:

The first time period in which Dm announces his Decision to be made.

Dissonance Reduction Effect on Preference Ratings measure:

The most sensitive of Dm's measure of Dm's preference or overall Liking of
an alternative is his answer to Question 5A, on which he rated the alterna-
tive's Ideal Percentage Goodness. In Table VIII this measure is used to
define Dissonance Reduction operationally.

Preference for Rejected Alternatives measure:

In order to retain comparability with other GDP-I prdictions we will use
Dm's Confirmation Candidate as the sole representative of Dm's Rejected
Alternatives. GDP-I leads us to believe that the effect of Dissonance
Reduction, if it can be shown to exist at all, would show up strongest in
Dm's Relative Liking ratings of his Final Choice versus former Confirma-
tion Candidate i.e. would yield the least stringent test of Hypothesis VIII.

TABLE VIII Summary:

a. No Dm in our sample reported traditional monotonic Dissonance Reduction.

b. 32%, or 9 Dms of 28, showed an initial Dissonance Reduction effect,
which was negated again in subsequent periods of observation.

c. No correlation was found when the numerical magnitude of Dm's Initial
Spread in preference ratings at time of Choice was employed as a pre-
dictor of whether or not Dm would then exhibit Increased Spread, i.e.
Initial Dissonance Reduction, in the following observation period.

d. 36%, or 10Dms of 28, indicated no Dissonance Reduction effect whatever.

e. 7%, or 2 Dms of 28, exibited latent Dissonance Reduction effects,
two or more weeks after their Decisions were first announced.

TABLE VIII

(See legend on next page)

	Small Initial Spread		Large Initial Spread	
Dissonance Reduction	None	0	None	0
Dissonance Recovery	C, E, J, $P^{(2)}$, R, T, V, *c	8	A	1
Dissonance Expansion	*K, Z, *g	3	*d(3)	1
No Dissonance Effects	B, M, N, O, S, U, X, *b	8	D, W	2
Latent Reduction	L	1	$F^{(1)}$	1
Latent Expansion	Y	1	None	0
No Data Available	H, Q, *a, *c	4	G, I	2

(1): Dm initially contracted his Liking-Spread, later expanded it:
His Spread in last period of observation was 95 percentage points.

(2): Dm later switched his Decision to the Confirmation Candidate.

(3): But on his last period of observation, six weeks after he had made his
Decision, Dm reported an increased Liking-Spread compared to two weeks
earlier.

Legend for TABLE VIII

Dissonance Reduction: Monotonic increase, including stabilization of the spread between Dm's liking ratings of his Final Choice and Confirmation Candidate, from time of Choice Announcement to final period of observation.

Dissonance Recovery: Initial increase but subsequent decrease of the spread between Dm's Liking ratings of Choice and Confirmation Candidate.

Dissonance Expansion: Monotonic decrease in the spread between Dm's Liking ratings of Choice and Confirmation Candidate.

No Dissonance Effect: No change in the spread of relative Liking ratings over the period of post-Choice observation.

Latent Reduction: No change in the spread during first post-Choice period(s), later monotonic increase in the spread of Liking ratings.

Latent Expansion: No change in spread initially, later monotonic decrease.

Large Initial Spread: Difference in Liking ratings of Choice versus Confirmation Candidate at the time of Decision Announcement exceeds 10 Ideal-Goodness percentage points on Question 5A.

Small Initial Spread: Difference in liking ratings at time of Decision Announcement is less than or equal to 10 Ideal-Goodness percentage points on Question 5A:

Numeral in right hand corners: indicates number of Dms falling in each rubric.

AUXILLIARY HYPOTHESIS (A)

"The effect of Confirmation processing on the Spread between Dm's
preference ratings for his Choice Candidate versus his Confirmation
Candidate will as a rule be as strong, if not stronger, than the
corresponding effect of his immediately post-Choice Commitment, say
Dissonance Reduction, processing."

Confirmation Process Effect measure:

Change in the Spread between Dm's Ideal Percentage ratings of his Choice
Candidate versus his Confirmation Candidate, on Question 5A, from time of
Search Termination to Confirmation Termination and Choice announcement.

Commitment (Dissonance Reduction) Effect measure:

Change in the Spread between Dm's Ideal Percentage ratings of his Choice
versus Confirmation Candidate, on Question 5A, during the first (2-week)
period of observation following Choice Announcement -- which, according
to the results in Table VIII, will be the period in which Dm will exhibit
maximum Dissonance Reduction effect (if any).

Auxilliary Table A Summarized:

a. 78%, or 18 Dms of 23, exhibited as strong or stronger effect, on the
   Spread between their preference ratings of their Choice versus Con-
   firmation Candidate alternatives, from their Confirmation processing as
   opposed to post-Choice Commitment (Dissonance Reduction) processing.

b. 70%, or 19 Dms of 27, increased the absolute magnitude of the Spread
   between Choice Candidate and Confirmation Candidate during Confirma-
   tion processing; whereas

c. 22%, or 6 Dms of 26, increased the absolute magnitude of the Spread
   between Final Choice and Confirmation Candidate during post-Choice
   Commitment (Dissonance Reduction) processing.

AUXILLIARY TABLE (A)

U: The Spread between Dm's Ideal percentage rating of Choice and Confirmation Candidates went UP -- increased.

E: The Spread stayed Equal -- same %-point magnitude.

D: The Spread went Down -- decreased.

Changes in Spread during Confirmation (pre-Choice)	-- during Dissonance Reduction (post-Choice)	Dms	Differential Effects of Confirmation vs. Dissonance Reduction on % Ideal ratings
U	D	F, K, Z, $\overset{*}{d}$, $\overset{*}{g}$	
E	D	None	12 Dms
U	E	B,L,M,O,R,Y,$\overset{*}{b}$	Conf. > Diss. Reduct.
U >	U	None	
U =	U	C, E	6 Dms
E	E	N, S, U, X	Conf. = Diss. Reduct.
E	U	T	
U <	U	A	5 Dms
D	E	D, W(2)	Conf. < Diss. Reduct.
D	U	P(1)	
U	Nd	G, $\overset{*}{a}$, I, Q	
E	Nd	None	9 Dms
Nd	U	$\overset{*}{e}$	No data (Nd) available
Nd	E	J, V	
Nd	Nd	H, $\overset{*}{c}$	

(1) Dms later switched to his Confirmation Candidate.

(2) Dm would prefer to go to work "for himself: this is his (Confirmation Candidate, which he does not believe he will end up choosing. He thus reports negative Spread between Choice and Confirmation Candidate before, as well as after Choice.

AUXILLIARY HYPOTHESIS (B)

"When Dm receives word from an alternative that he will NOT receive an
Offer from it (NOF) then his Liking of that alternative will drop, ceteris
paribus. When Dm does receive an Offer (HO) or a firm Promise of an Offer
(DG) from an alternative, ceteris paribus (whatever that means in this
case), his Liking of the alternative will increase."

Recently Received Job Offer measures:

1. RDG: Dm was NA (Not completed Application procedures) or AFR (Awaiting
   Further Response) on the alternative last period, but has Recently been
   given a firm promise DG of an Offer.

2. RHO: Dm was NA/AFR and has Recently HO received an offer.

3. RNOF: Dm was NA/AFR and was Recently told he will not receive an offer (NOF).

Change in Reported Liking measures:

The following two measures of Change Liking will be compared:

i. Dm gives direct indication of whether or not his Liking of the alterna-
   tive has Changed, as well as by how Much, in Question 6A (see Legend
   for Auxilliary Table B).

ii. The computed Change in Dm's answers to Question 5A -- his Ideal-percen-
    tage rating of the alternative -- from the Preceding to the Current
    period of observation.

AUXILLIARY TABLE (B)

MM: Like Much More; SL: Like Somewhat Less; NC: No Change.
SM: Like Somewhat More; ML: Like Much Less;

CCLR: Computed Change in Dm's Ideal Percentage Liking Rating;
U: Dm's absolute Ideal Percentage rating went Up, i.e. increased;
E: Dm's absolute % Ideal rating stayed Equal, i.e. remained stable;
D: Dm's absolute % Ideal rating Decreased.

RDG/RHO: Has Recently received Offer; RNOF: Has Recently received "No Offer"

RDG/RHO (n = 87) Before Choice Announcement (97% of RDG/RHO)				RNOF (n = 45)[1] Before Choice Announcement (n = 38)				After Choice Announcement (n = 17)			
Dm says	No. of Dms	CCLR	No. of Dms	Dm says	No. of Dms	CCLR	No. of Dms	Dm says	No. of Dms	CCLR	No. of Dms
MM	7	U	7	MM	0	U	—	MM	0	U	—
		E	—			E	—			E	—
		D	—			D	—			D	—
SM	31	U	21	SM	1	U	1	SM	1	U	1
		E	8			E	—			E	—
		D	2			D	—			D	—
NC	32	U	10	NC	18	U	1	NC	14	U	6
		E	9			E	2			E	8
		D	13			D	15			D	—
SL	16	U	7	SL	10	U	1	SL	2	U	1
		E	2			E	—			E	—
		D	7			D	9			D	1
ML	1	U	—	ML	9	U	—	ML	0	U	—
		E	—			E	—			E	—
		D	1			D	9			D	—

[1]. Dm Q's Observation Period No. 3 was excluded from this analysis due to his way-out-of-line response-set during that observation.

Auxilliary Table B Summarized:

<u>a</u>. No significant differences were found between <u>RDG</u> and <u>RHO</u> occasions, so these observations were therefore lumped.

<u>b</u>. However valid the <u>ceteris paribus</u> assumption is with respect to the RDG/RHO case -- in general we may expect that Dms <u>will</u> obtain significant information about an alternative, in addition to their "Yes, we will make you an offer":

    <u>43%</u> of the time Dms report Increased Liking after <u>RDG/RHO;</u>

    <u>36%</u> of the time report No Change in Liking after <u>RDG/RHO</u>;

    <u>21%</u> of the time Dms report Decreased Liking after <u>RDG/RHO</u> .

<u>c</u>. The <u>ceteris paribus</u> assumption seems more reasonable in the <u>RNOF</u> case -- Dms generally do not obtain much more than a polite "No" from a Rejecting alternative:

If <u>RNOF</u> happened <u>before</u> Dm had Made and announced his Final Decision:

    <u>2%</u> of the time Dms report Increased Liking for the <u>RNOF</u> alternative;

    <u>48%</u> of the time Dms report No Change in Liking after <u>RNOF</u>;

    <u>50%</u> of the time Dms report Decreased Liking after <u>RNOF</u>, half of that much decreased (Like Much Less).

If <u>RNOF</u> happened <u>after</u> Dm had Made and announced his Final Decision:

    <u>83%</u> of the time, in <u>14 cases of 17,</u> Dms report No Change in their Liking of the <u>RNOF</u> alternative.

    <u>12%</u> of the time, in <u>2 cases of 17</u>, Dms report somewhat Less Liking for <u>RNOF</u>.

<u>d</u>. Given that Dm reports <u>No Change</u> in his Liking of a <u>RNOF</u> alternative <u>before</u> his Decision:

    in <u>15 of the 18</u> cases does Dm's Computed Ideal Percentage Liking score in fact <u>decrease</u> (i.e. Unrecognized or Implicit Dissonance Reduction might be said to occur).

<u>e</u>. Given that Dm reports <u>No Change</u> in Liking of a <u>RNOF</u> alternative <u>after</u> his Decision;

    in <u>14 of 14</u> cases does Dm's Computed Ideal Percentage Liking Score in fact <u>increase or not change</u> (i.e. no Implicit Dissonance Reduction takes place; <u>Hypothesis</u>: may no longer be required to protect self-esteem).

SUMMARY OF FINDINGS

Our GDP-I model suggested that decision making was more adequately described as a process consisting of five or six recognizedly different phases, namely:

> Problem Recognition;
>
> Problem Defintion;
>
> Solution Planning;
>
> Alternatives Search and Evaluation;
>
> Choice Confirmation; and
>
> Decision Commitment and Implementation.[5]

With respect to each of these decision phases separately distinct sets of theoretical concepts seemed required in order to enable us adequately to describe the behavior of Dms in that phase of decision making. The purpose of this present study was _a_. to demonstrate that a GDP-I "Choice Confirmation" phase existed in the decision-making activity of Dms who were engaged in selecting the organization in which to work -- in which to "participate" -- upon graduation with their Masters or Doctors degree from M.I.T. in Industrial Management; and _b_. to test out of a set of the more detailed Search, Confirmation, and Decision Commitment hypotheses implied by the same GDP-I model.

The existence of a Confirmation phase in Dms' occupational choices
is demonstrated by implication in this study:

First, we found that there existed a significant time span -- on the
average about 2 - 3 weeks -- from the time most Dms in our sample quit
being actively interested in obtaining and evaluating new alternatives
to the time they announced to themselves and others that they had
finally made their decisions. During this time period Dm character-
istically reported that he was "actively engaged in making his decision".
That is to say something, some sort of decision information processing,
which GDP-I has then labeled Confirmation, occurs from the point of
Dm's termination of Search-for-alternatives to the Announcement of,
and subsequent Commitment to, his final Choice.

Secondly, a number of behavioral relationships that GDP-I predicted
should be observable during, before, and after this Choice Confirma-
tion phase, were indeed borne out for overwhelming majorities of Dms
in our sample.

More specifically, in summary, the longitudinal questionnaire data
we collected support the following decision process hypotheses:

Hypothesis I: (As noted) a significant amount of information processing remains
to be done by Dms from the point when they terminate of Search for alter-
natives, and have implicitly determined which alternatives they intend to
accept, to the point of their explicit acceptance of the "best" alterna-
tive.

Hypothesis II: Dm's intervening Confirmation processing is neither trivial
nor somehow "sub-consciously non-rational" -- as evidenced by the
high degree of Uncertainty Dms in general attach to their prediction,
at time of Search Termination, that they indeed will end up accepting what
we at that point are able to identify as their "Choice Candidates."

Hypothesis III: The nature of Choice Confirmation processing allows us to
predict with amazing accuracy, at time of Search Termination, which
of a number of all-presumably-acceptable alternatives Dm will eventually
end up accepting.

Hypotheses IV and V: Dm will terminate Search for new alternatives before
his budgeted Search Resources -- such as time and potentially available
alternatives -- run out, if and only if he has ascertained that his
potential Choice Candidate is indeed a viable, i.e. an in fact attainable,
alternative.

Hypothesis VI: Dm is not adequately described by traditional aspiration-level
Theory as "Searching for alternatives one-at-a-time," and as accepting
as his Choice the first acceptable alternative he thus finds.

Hypotheses VII: Since one of Dm's principle means of Confirmation involves
evaluation of his "best" alternative by comparing it directly and
explicitly to his "second-best" one -- his Confirmation Candidate --
and since Dms usually do not perform such comparisons with respect to
hypothetical alternatives (according to GDP-I), Dm will in general
determine that his Confirmation Candidate indeed is a Viable alterna-
tive before he terminates Confirmation and announces his Choice.

Hypothesis VIII: Dissonance Reduction in the form suggested by Heider,
Festinger, and others is at best only a partial explanation of Dm's
post-Choice Decision Commitment processing.

An interesting post-Choice Commitment phenomenon was found to
be the following: For exactly half of the Dms' in our sample their
initial Dissonance Reduction-like spreading-apart of reported overall
Liking for their Choice, as compared to their former Confirmation
Candidate, was followed in subsequent time periods of observation
by a reduction, and often total recovery, of this Liking—difference-
increment of their final Choice versus former Confirmation Candidate.

One tempting explanation of this observation, which obviously
must remain an un-examined hypothesis in the context of this study,
is that the observed "initial spreading-apart" effect is symptomatic
of Dm's experiencing residual Confirmation problems, which he has not
been able to resolve intllectually by the time he "had to" make a
Decision -- which he thus, in the best   Dissonance Reduction tradi-
tion, resolves affectively post-Choice -- but which, when Dm has gained
additional time and sufficient "psychological distance" from his
traumatic point-of-choice (i.e. when the potentially threatening "need
to make a decision has been removed and perhaps partially forgotten)
get themselves intellectually displaced by Dm's by then having "inven-

ted" a better cognitive decision rule for "why" he indeed should have decided the way he in fact did: In effect this intellectual-cognitive decision rule now allows Dm to be more "honest" with himself, and thus enables him to free up again" his initial, induced affective-Like-Dislike spread between Final-Choice and Confirmation-Candidate alternatives.

Finally in this study we examined two "auxilliary" propositions -- auxilliary because they had not been explicitly stated ex ante by the experimenter, i.e before   data were collected. But both propositions seemed interesting enough to check out once the data were in, in light of current debate regarding the existence and nature of the Heider-Festinger defined Dissonance Reduction phenomenon.[6]   The data presented a fair amount of support for the following generalizations:

A. The celebrated Dissonance Reduction spreading-apart-of-relative-liking effect is at least as strong (and usually stronger) prior to, as opposed to just after, the point in time when Dm commits himself to a choice.

B. Dm is more likely to decrease his reported Liking of an alternative once he is told he will Receive No Offer,   if this announcement reaches him before he has made and publically announced his Final Decision. If Dm is told "No Offer" after he has made his own Final Decision then No-Change is likely to be observed in his reported Liking of the alternative. Moreover, should Dm in fact report

No-Change to have occurred in his Liking of an alternative by which he has just been rejected, <u>before</u> Dm has made his own decision, then he will generally decrease his own reported Percentage-Ideal Rating of the same alternative. Correspondingly, <u>after</u> Dm has announced his own Decision he will exhibit <u>no</u> such "unrecognized" decrease in his Percentage-Ideal Rating of a rejecting alternative -- i.e., in the latter case Dm's inter-period questionnaire-answering reliability, or "veridity", will remain high.

APPENDIX A - 1

"Blue Questionnaire"

(administered prior to Dm's Choice Announcement)

Total time to complete questions_____

Time to complete these questions caused me (circle): MUCH- SOME- LITTLE- NO TROUBLE AT ALL

CHECK THE MORE TRUE STATEMENTS

Initials, No. _____   Date: _____

Return Deadline:_____
Your last report was on _____

A. "Presently I $\left\{\begin{array}{l}\text{___am}\\ \text{___am not}\end{array}\right\}$ actively looking for new companies to interview."

B. "Presently whenever (if) another job opportunity present itself in my general area I'm $\left\{\begin{array}{l}\text{___very much}\\ \text{___quite}\\ \text{___only somewhat}\\ \text{___not particularly}\end{array}\right\}$ $\left.\begin{array}{l}\text{inclined to take the trouble to}\\ \text{follow it up (i.e. interview, etc.)}\end{array}\right.$ Depending on (in a few words if appropriate):

C. "I $\left\{\begin{array}{l}\text{___have}\\ \text{___have not}\end{array}\right\}$ recently considered trying other means of locating job prospects" (like writing off to company presidents, putting ads in the paper, hiring an agency, other than the things you're already doing for locating prospects)

D. "I $\left\{\begin{array}{l}\text{___have already}\\ \text{___haven't yet}\end{array}\right\}$ started to eliminate reasonable job offers from my final set of possibilities." ("final set" is the set to which you don't expect to add further alternatives before finally deciding)

E. It is $\left\{\begin{array}{l}\text{___virtually certain}\\ \text{___hihgly likely}\\ \text{___rather likely}\\ \text{___only slightly likely}\\ \text{___as uncertain whether}\\ \qquad\text{I will or wont}\end{array}\right\}$ that I $\left\{\begin{array}{l}\text{___will}\\ \text{___won't}\end{array}\right\}$ end up with one of the jobs I'm already considering at present."

ALSO:

"The latter half of this statement that I $\left\{\begin{array}{l}\text{will}\\ \text{wont}\end{array}\right\}$ end etc" is true with a probability of ___%

F. "I believe I $\left\{\begin{array}{l}\text{___am still far away from making}\\ \text{___am getting closer to making}\\ \text{___am quite close to making}\\ \text{___have recently started to make}\\ \text{___am still in the process of making}\\ \text{___have actually made on date _____}\end{array}\right\}$ my final job decision" (check one or more)

"My deadline for a final decision is: _____" (if you have set one)

G. "It seems $\left\{\begin{array}{l}\text{___virtually certain}\\ \text{___highly likely}\\ \text{___rather likely}\\ \text{___only slightly likely}\\ \text{___as uncertain whether}\\ \qquad\text{I will or wont}\end{array}\right\}$ that I $\left\{\begin{array}{l}\text{___wont}\\ \text{___will}\end{array}\right\}$ locate another job better than my best prospect(s) to date."

Do you have firm offer(s) yet from all your "best" prospect(s)? Yes____. No ____.

H. "Job hunting at the moment is causing me $\left\{\begin{array}{l}\text{___terrific}\\ \text{___quite bad}\\ \text{___a fair amount}\\ \text{___only a little}\\ \text{___no particular}\end{array}\right\}$ of pain and worry, mainly due to

(CHECK THE MORE TRUE ANSWER)

J. Are you presently able to describe to yourself
{
___the specific job that
___quite definitely what
___fairly definitely what
___somewhat tentatively what
___not at all what
}
would be
the IDEAL
job for y

K. "What I consider to be the IDEAL job for me {___has / ___has not} changed perceptively since my last
report."

If it has: "It has changed as follows:

L. How "good" would you say a job would have to be (on a scale of 0-100% of "ideal" rating)
before you'd accept it? _____%.

M. I consider my job decision to be a
{
___critically
___highly
___quite
___somewhat
___not particularly
}
important decision in my life."

(1) and (2)

In col (1) are names of places which at the time of the last report (_____):

    (a)   you were then actively considering. Please add to col (1) the names of new entries you are seriously considering.

    (b)   you are no longer considering, or never have considered i.e. my entries.

In col (2) indicate which of the following are more true (for all entries):

    C: I am definitely Considering this one Seriously;

    P: This is a Potentially Promising candidate that I'm investigating;

    S: I Suspect I may No longer be considering this one Seriously;

    D: I Did, but I'm definitely No longer Considering this one;

        -a: and I've already told them so,
        -b: and I'm ready to tell them so any time,
        -c: but I won't tell them until I've finally decided which job I'll take,
        -d: they've already told me "no thanks."

    N: I Never did consider this employment prospect seriously.

(3)

In col (3) please indicate the "current state" of each column 1 "a" name:

    P: I haven't yet, but I definitely Plan to get in touch with them

    I/G [ ]: Interviewed only, but definitely Going to visit [insert approx date].

    I/W: _____, and Waiting for invitation to visit.

    I/N: _____, however, I'm Not going to visit them.

    V( )/G [ ]: Visited them ( ) times, and am Going to visit again [approx date].

    V( )/M: _____, and May Visit again before I finally decide.

    V( )/N: _____, and have No intention of visiting again before I deci

    C: Corresponded with them (insert C rather than I if that's appropriate)

ALSO:

Given everything you now know about each job prospect in col (1) (a and b) how likely is it at present that you'll actually end up working for them?

          MORE UNLIKELY   MORE LIKELY

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

[col (3) sample ans: "V(1)/N/+x"]

(4)

For <u>all</u> entries in col <u>1</u> (<u>a</u> and <u>b</u>) please indicate in col (4)

<u>Indicate how much you currently LIKE that job prospect</u> by means of a numeral

in the following scale:

DISLIKE MORE $\longleftarrow$ $\longrightarrow$ LIKE MORE

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

(Kindly answer this, whatever the current status of this prospect in your deliberations)

ALSO:

Please group <u>all</u> col (1) prospects into 4 classes,

<u>by assigning one of the following letter grades to each 'on in col (4)</u>:

current uncertainty prevents you from assigning a single letter, write down your isoprobable
range)

<u>A</u>: "This sounds like an outstanding job opportunity

<u>B</u>: "Good, solid job, but not outstanding"

<u>C</u>: "Borderline case, as far as I'm concerned"

<u>D</u>: "Not good for me"

[col (4) sample ans: "<u>+x/B</u>"]

(5)

For <u>all</u> entries in col <u>1</u> (<u>a</u> and <u>b</u>) please indicate in col (5)

'Offhand, I'd say at present this job prospect looks like

it's about <u>(0 - 100)% as good as</u> what I consider would be an <u>ideal</u> job for me"

(if a <u>range</u> of values is a better estimate of your present feeling, indicate a range)

ALSO:

Given everything you now know about each job prospect in col (1-a)

<u>which is the more true statement for each prospect?</u>

"At present it's
$\begin{cases} \text{V: virtually certain} \\ \text{H: highly likely} \\ \text{F: fairly likely} \\ \text{S: slightly likely} \\ \text{U: entirely uncertain} \\ \quad \text{whether will/wont} \end{cases}$
that I $\begin{cases} \text{Y: will} \\ \text{N: wont} \end{cases}$ end up working for this prospect"

[col (5) sample ans: "<u>x/F-Y</u>"]

(6)

Has your opinion of this job prospect changed since your last report (_____)?

Please answer in col (7) for all "a" and "b" in col (1)

"I like this job prospect $\left\{ \begin{array}{ll} \text{ML:} & \text{much less} \\ \text{SL:} & \text{somewhat less} \\ \text{NC:} & \text{no more, no less} \\ \text{SM:} & \text{somewhat more} \\ \text{MM:} & \text{much more} \end{array} \right\}$ now"

ALSO:

I'd say there's been about a $\pm$ (0 - 100)% change in how I rate this job as a percent of what I'd consider would be an ideal job for me.

[sample ans: "SM/+x"]

(7)

For all prospects in col 1 (a and b) please indicate in col (7) how much you currently like each prospect. Consider each one carefully:

At the moment I $\left\{ \begin{array}{ll} \text{L:} & \text{like} \\ \text{D:} & \text{dislike} \end{array} \right\}$ this job prospect $\left\{ \begin{array}{ll} \text{V:} & \text{very, very much} \\ \text{Q:} & \text{quite a lot} \\ \text{F:} & \text{a fair amount} \\ \text{L:} & \text{just a little} \\ \text{S:} & \text{so-so} \end{array} \right\}$

ALSO:

col (7) assign your present personal probability estimate (0 - 100)% to each col (1-a) name that you actually WILL end up working for them.

[col (7) sample ans: "L-F/x"]

(8)

For all "a" and "b" in column 1

how <u>definite</u> would you say your current opinion is of <u>HOW WELL YOU LIKE</u> this prospect?

"I consider my opinion regarding this job prospect to be $\left\{\begin{array}{ll} \text{QD:} & \text{quite definite} \\ \text{FD:} & \text{fairly definite} \\ \text{ST:} & \text{somewhat tentative} \\ \text{HT:} & \text{highly tentative} \\ \text{NE:} & \text{non-existent} \end{array}\right\}$

<u>ALSO:</u>

Consider <u>all</u> entries in col <u>1</u> (<u>a</u> and <u>b</u>)

Please assign in col (8) a numerical "rank" number to each entry

<u>in the order of your present preference of working for them</u>

(i.e., "1," "2," "3," ... etc.)

Feel free to use any numeral as many times as necessary to indicate your honestly
felt inability to discriminate your present feelings among those particular jobs.

[col (8) sample ans: "<u>FD/3</u>"]

(9)

<u>What kind of (fair) odds are you presently willing to grant,</u>

n col (9) to each job prospect in col (1), <u>that you actually will end up working for them?</u>

<u>ALSO:</u>

<u>Besides</u> what will be (is) included in their formal job offer to you

<u>do you expect to get any important additional information re this job</u>

before you'll make up your mind about it?

I $\left\{\begin{array}{ll} \text{D:} & \underline{\text{do}} \\ \text{N:} & \text{do } \underline{\text{not}} \end{array}\right\}$ expect to get important information re this job that could significantly
alter my present opinion of it.

Please answer "<u>D</u>" (do) in col (9) <u>only</u> if you have specific pieces of info in mind.

[col 9 sample ans: "x:y/D"]

In col (10) please indicate for col (1-a) names which is more true:

NOF[   ]:   They've since told me they'd Not be able to make me an Offer [approx date].

DG: They told me I'd Definitely Get an offer, but I haven't seen it yet.

AFR: I'm still Awaiting their Final Response re an offer or not.

HO[   ]:   I Have an Offer from them. I got it: [approx date].

NA: I have Not completed their Application procedure yet.

ALSO:

Besides what might be included in their formal job offer to you since last report, have you RECEIVED ANY NEW IMPORTANT INFORMATION relevant to your evaluation of this job

Please indicate $\begin{Bmatrix} Y: & yes \\ N: & no \end{Bmatrix}$ in column (10) for all col 1 (a and b) entries

IF YES (please):

"Receiving it has made me like it $\begin{cases} MM: & \text{much more} \\ SM: & \text{somewhat more} \\ NC: & \text{no more, no less} \\ SL: & \text{somewhat less} \\ ML: & \text{much less} \end{cases}$ "

"Receiving it has occasioned (0 - 100)% of the change
(that I report in col 6) of my "ideal rating change" for this prospect."

[col (10) sample ans: "AFR/Y/SM/x%"]

MORAL: walk backwards for Christmas across the Irish Sea.

*

- Two Irishmen were heading across a bridge in Dublin,
against the wind. Two girls were having their skirts
blown about, crossing the other way.
One Irishman, always the gentleman, tipped his hat and
said warmly, "Airy, ain't it?" To which the prettiest retorted, "Whad d'you expect, feavvers?!"

(11)

Answer col (11) where you're <u>AFR or NA</u> in col (10): For each one please indicate

the <u>more</u> <u>true</u> form of <u>each</u> of the following 3 statements:

(by noting the proper likelihood mnemonics in place of the "blanks")

$$
\textbf{I:} \quad \text{"It's} \begin{cases} \text{V: virtually certain} \\ \text{H: highly likely} \\ \text{F: fairly likely} \\ \text{S: slightly likely} \\ \text{U: entirely uncertain} \\ \quad \text{whether yes or no} \end{cases} \text{ that they} \begin{cases} \text{Yes: will} \\ \text{No: wont} \end{cases} \text{make me an } \underline{\text{offer}};
$$

my <u>P</u> probability of that occuring is ____%

<u>II:</u> "GIVEN that they MAKE me an offer it's $\left\{\overline{\text{"BLANK"}}\right\}$ that their offer $\begin{cases} \text{Y: will} \\ \text{N: wont} \end{cases}$ be overall

COMPETITIVE to the best I have or expect to get; my <u>P</u> of that occuring is ____%"

<u>III:</u> "GIVEN that they do make me a COMPETITIVE offer it's $\left\{\overline{\text{"BLANK"}}\right\}$ that

I $\begin{cases} \underline{\text{Y}}: \text{ will} \\ \underline{\text{N}}: \text{ wont} \end{cases}$ <u>ACCEPT</u> their offer; my <u>P</u> of that occurring is ____%."

$$
\left[\text{col (11) sample ans:} \begin{cases} \text{H-Y/x\%} \\ \text{S-N/y\%} \\ \text{F-Y/z\%} \end{cases}\right]
$$

(12)

Answer col (12) only where you're (I) <u>AFR</u> /NA;(II) new <u>HO</u> in col (10):

$$
\textbf{(I):} \quad \left.\begin{array}{l} \underline{\text{If NA or}} \\ \underline{\text{If still AFR}} \end{array}\right\} \text{ are you hoping} \begin{cases} \text{V: very, very much} \\ \text{Q: quite a bit} \\ \text{S: somewhat} \\ \text{L: a little} \\ \text{N: not particularly} \end{cases} \text{for an offer from them?}
$$

<u>ALSO:</u> You'd be $\begin{cases} \text{N: not particularly} \\ \text{L: a little} \\ \text{F: fairly} \\ \text{H: highly} \end{cases}$ disappointed were they <u>not</u> to give you an offer.

[col (12) sample ans (I): "<u>Q/N</u>"]

$$
\textbf{(II):} \quad \underline{\text{If a new "HO,"}} \text{ was the offer} \begin{cases} \text{MB: much better} \\ \text{SB: somewhat better} \\ \text{JA: just about what} \\ \text{SW: somewhat worse} \\ \text{MW: much worse} \end{cases} \text{than you had expected?}
$$

<u>ALSO:</u>

Is the "Offer as a whole" competitive with the best you have so far? $\begin{cases} \text{Y: yes} \\ \text{JA:: just about} \\ \text{NQ: not quite} \\ \text{N: no} \\ \text{HS: hard to say} \end{cases}$

[col (12) sample ans (II): " JA/NQ"]

	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Irwin Mgt. C.	P	I/W +3	A +3	60% 5-Y	SM 30	L-F 10	HT 3	1:10 D
A.T. and T.	S	V(I)/N -2	B 0	50% 5-N	SL 20	L-L 2	FD 4	N 1:40
KODAK	C	V(I)/N +4	B +4	60% 5-Y	SM 20	L-F 4	ST 3	1:20 N
TEXAS INSTRUMENTS	P	I/G (Mar) +2	? +2	50% F-N	NC 0	L-L 2	HT 5	1:40 P
WESTINGHOUSE	P	I/G (Mar 8) +2	? +2	50% F-N	NC 0	L-L 2	HT 6	1:40 P
STANDARD OIL (N.J.)	C	I/G (Feb 27) +6	? +6	70% 5-Y	NC 0	L-Q 20	ST 2	1:5 A
HUMBLE OIL	C	V(I)/N +8	A +8	80% F-Y	NC 0	L-Q 30	FD 1	1:3 N
BOOZ-ALLEN AND HAMILTON	S	V(I)/N -6	B 0	40% H-N	NC 0	L-5 0	FD 7	1:001 N
McKINSEY AND CO.	D-a	V(I)/N -10	C 0	80% V-N	NC 0	D-L 0	QD 8	1:1008 N
Ford	C	V(I)/N +8	A +8	90% F-Y	NC 0	L-Q 30	FD 1	1:3 N
(1-b)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
PRIVATE ASSISTANT TO JOHN PAUL GETTY (OIL)	N	-10	0	20% V-N	NC 0	L-5 0	FD 9	N

APPENDIX A - 2

"Green Questionnaire"

(administered after Dm's Choice Announcement)

Total time to complete questions_____

ｅ to complete these questions caused me (circle): MUCH- SOME- LITTLE- NO TROUBLE AT ALL

CHECK THE MORE TRUE STATEMENTS

tials, No. _____   Date: _____

Return Deadline:_____
Your last report was on _____

"Job hunting at the moment is causing me
$\left\{\begin{array}{l} \text{___terrific} \\ \text{___quite bad} \\ \text{___a fair amount} \\ \text{___only a little} \\ \text{___no particular} \end{array}\right\}$ of pain and worry; mainly due to

Are you presently able to describe to yourself
$\left\{\begin{array}{l} \text{___the specific job that} \\ \text{___quite definitely what} \\ \text{___fairly definitely what} \\ \text{___somewhat tentatively what} \\ \text{___not at all what} \end{array}\right\}$
would be
the IDEAL
job for you'

'What I consider to be the IDEAL job for me
$\left\{\begin{array}{l} \text{___has} \\ \text{___has not} \end{array}\right\}$
changed perceptively since my last
report."

If it has: "It has changed as follows:

I consider my job decision to be a
$\left\{\begin{array}{l} \text{___critically} \\ \text{___highly} \\ \text{___quite} \\ \text{___somewhat} \\ \text{___not particularly} \end{array}\right\}$
important decision in my life."

How "good" would you say a job would have to be (on a scale of 0-100% of "ideal" rating
before you'd reconsider your present job decision? _____%

(1) and (2)

In col (1) are names of places which you <u>have</u> considered for jobs. Please circle the one you actually chose, and indicate <u>when</u> you decided to take that job.

<u>In col (2) indicate which of the following are more true (for all entries)</u>:

<u>DA</u>:   I've <u>d</u>ecided to <u>a</u>ccept, but I haven't told them so yet.

<u>FA</u>:   I've <u>f</u>ormally <u>a</u>ccepted the job ("date").

<u>T</u>:   I've already <u>t</u>old them I'm no longer interested in them.

<u>R</u>:   I'm <u>r</u>eady to tell them so any time.

<u>W</u>:   I <u>w</u>on't tell them until ("date") and (why not?)

<u>NT</u>:   they've already told me "<u>no t</u>hanks."

<u>N</u>:   I <u>N</u>ever did consider this employment prospect seriously.

(4) (No. 3 has been deleted)

For <u>all</u> entries in col <u>1</u> please indicate in col (4)

<u>Indicate how much you currently LIKE that job prospect by means of a numeral</u> in the following scale:

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

(Kindly answer this, whatever the current status of this prospect in your deliberation

ALSO:

Please group <u>all</u> col (1) prospects into 4 classes,

<u>by assigning one of the following letter grades to each in col (4)</u>:

(if current uncertainty prevents you from assigning a single letter, write down your isoprobable range)

<u>A</u>:   "This sounds like an outstanding job opportunity

<u>B</u>:   "Good, solid job, but not outstanding"

<u>C</u>:   "Borderline case, as far as I'm concerned"

<u>D</u>:   "Not good for me"

[col (4) sample ans: "<u>+x/B</u>"]

(5)

For all entries in col 1. please indicate in col (5)

"Offhand, I'd say at present this job prospect looks like
it's about (0 - 100)% as what I consider would be an ideal job for me"

(if a range of values is a better estimate of your present feeling, indicate
a range)

[col (5) sample ans: "x%"]

(6)

Has your opinion of this job prospect changed since your last report (   )?

Please answer in col (7) for all "a" and "b" in col (1)

"I like this job prospect
{
ML: much less
SL: somewhat less
NC: no more, no less
SM: somewhat more
MM: much more
}
now"

ALSO:

I'd say there's been about a ± (0 - 100)% change in how I rate this job
as a percent of what I'd consider would be an ideal job for me.
since last report (   ).

[sample ans: "SM/+x"]

(7)

For all prospects in col 1 please indicate in col (7)
how much you currently like each prospect. Consider each one carefully:

At the moment I $\left\{\begin{array}{l} \underline{L}: \quad \text{like} \\ \underline{D}: \quad \text{dislike} \end{array}\right\}$ this job prospect $\left\{\begin{array}{ll} \underline{V}: & \text{very, very much} \\ \underline{Q}: & \text{quite a lot} \\ \underline{F}: & \text{a fair amount} \\ \underline{L}: & \text{just a little} \\ \underline{S}: & \text{so-so} \end{array}\right\}$

[col (7) sample ans: "L-F"]

(8)

In column 1
how definite would you say your current opinion is of HOW WELL YOU LIKE this prospect?

"I consider my opinion regarding this job prospect to be $\left\{\begin{array}{ll} \text{QD:} & \text{quite definite} \\ \text{FD:} & \text{fairly definite} \\ \text{ST:} & \text{somewhat tentative} \\ \text{HT:} & \text{highly tentative} \\ \text{NE:} & \text{non-existant} \end{array}\right\}$

ALSO:

Consider all entries in col 1

Please assign in col (8) a numerical "rank" number to each entry

in the order of your present preference of working for them

(i.e., "1," "2," "3," ...etc.)

Feel free to use any numeral as many times as necessary to indicate your honestly
felt inability to discriminate your present feelings among those particular jobs.

[col (8) sample ans: "FD/3"]

(9)

Besides what will be (is) included in their formal job offer to you
<u>do you expect to get any important additional information re this job</u>

I $\begin{cases} \text{D:} & \underline{\text{do}} \\ \text{N:} & \text{do } \underline{\text{not}} \end{cases}$ expect to get important information re this job that could sig-
nificantly alter my present opinion of it.

Please answer "<u>D</u>" (do) in col (9) <u>only</u> if you have specific pieces of info in min[

[col 9 sample ans: "D"]

(10)

<u>NOF</u>[   ]:   They've told me they'd <u>N</u>ot be able to make me an <u>O</u>ffer [approx date].

<u>DG</u>:   They told me I'd <u>D</u>efinitely <u>G</u>et an offer, but I haven't seen it yet.

<u>AFR</u>:   I'm still <u>A</u>waiting their <u>F</u>inal <u>R</u>esponse re an offer or not.

<u>HO</u>[   ]:   I <u>H</u>ave an <u>O</u>ffer from them. I got it: [approx date, if not previously reported

<u>NA</u>:   I have <u>N</u>ot completed their <u>A</u>pplication procedure yet.

<u>ALSO</u>:

Besides what might be included in their formal job offer to you since last report, have
you <u>RECEIVED ANY NEW IMPORTANT INFORMATION</u> relevant to your evaluation of this job?

Please indicate $\begin{cases} \underline{\text{Y}}\text{:} & \text{yes} \\ \underline{\text{N}}\text{:} & \text{no} \end{cases}$ in column (10) for all col 1 entries

IF YES (please): $\begin{cases} \text{MM:} & \text{much more} \\ \text{SM:} & \text{somewhat more} \\ \text{NC:} & \text{no more, no less} \\ \text{SL:} & \text{somewhat less} \\ \text{ML:} & \text{much less} \end{cases}$ "

"Receiving it has made me like it

"Receiving it has occasioned (0 - 100%) of the <u>change</u>
that I report in col 6 of my "ideal rating change" for this prospect"

[col (10) sample ans: "AFR/Y/SM/x%"]

NOTES AND REFERENCES

1. P. Soelberg, "First generalizable decision process model: CDP-I,"
    Sloan School of Management, Massachusetts Insitute of Technology, 1966.

2. Ibid.

3. See H. A. Simon, "A behavioral model of rational choice," Quatr. J. of
    Econ., 1955, 69, pp. 99-118; W. H. Starbuck, "Level of aspiration,"
    Psych. Rev. 1963, 70, pp. 51-60.

4. See L. Festinger, Conflict, decision, and dissonance reduction,
    Stanford University Press, 1964.

5. Soelberg, "CDP-I", op. cit.

6. Festinger, op. cit.; see also A. Chapanis and N. P. Chapanis, "Cognitive
    dissonance, five years later," Psychol. Bull. 1964, 61, pp. 1-22.